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(71) Applicant
Michael Joseph McKeever,
58 St Alphonsus Road, Drumcondra, Dublin 9, Republic of Ireland

(72) Inventor
Michael Joseph McKeever

(74) Agent and/or Address for Service
Reddie & Grose,
16 Theobalds Road, London WC1X 8PL

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E01C 23/02

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US 4135840 US 3930740

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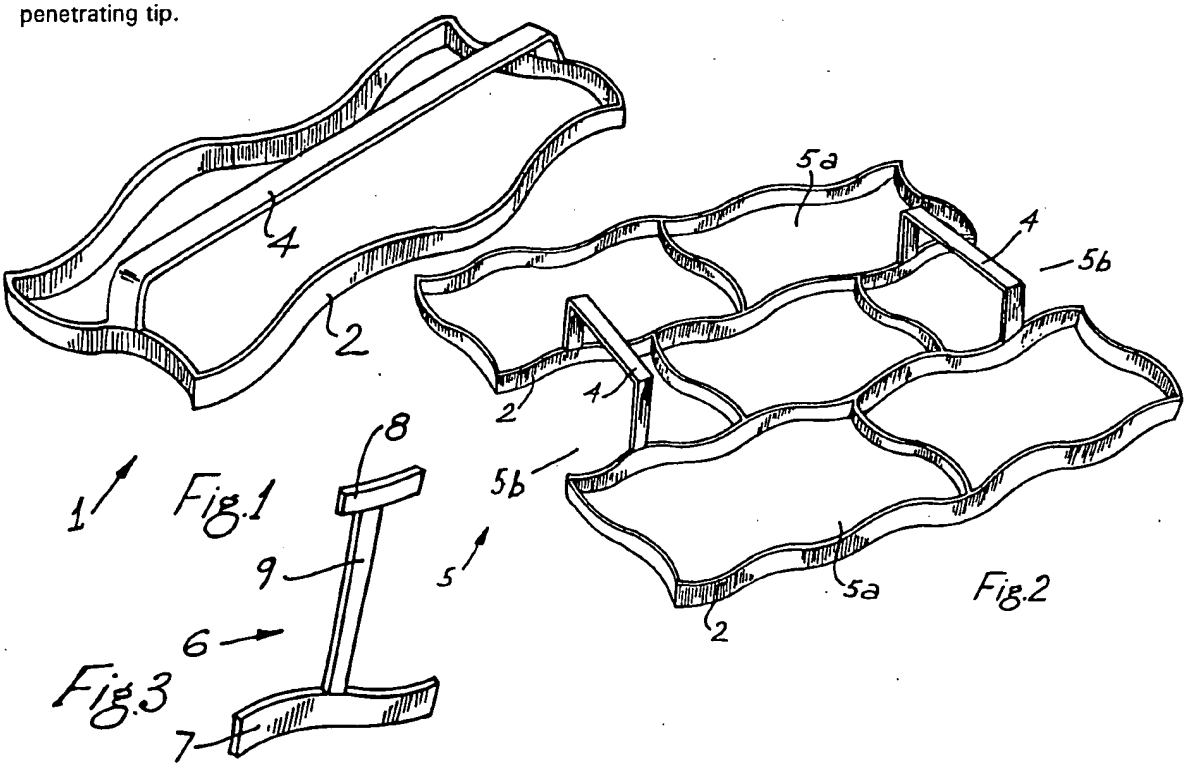
E1G
Selected US specifications from IPC sub-class E01C

(54) Concrete patterning tool

(57) A tool for forming a patterned impression in a cementitious material comprises a blade 2 which is pressed into cementitious material using a handle 4. The blade 2 may be shaped to form a closed or open interior pattern and may also form an open exterior pattern. Usually there are a kit of tools such as 1,5,6 for forming a desired pattern. A first tool 1 of the kit for covering small areas has a closed perimeter defining an interior pattern, a second tool 5 for covering larger areas has closed interior patterns 5A and open exterior patterns 5B, and a third tool 6 of the kit for finishing has an open perimeter blade portion 7 or 8.

Each of the blades 2 of the tools may be coated with a release agent and/or may be formed with a penetrating tip.



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The drawing(s) originally filed was/were informal and the print here reproduced is taken from a later filed formal copy.

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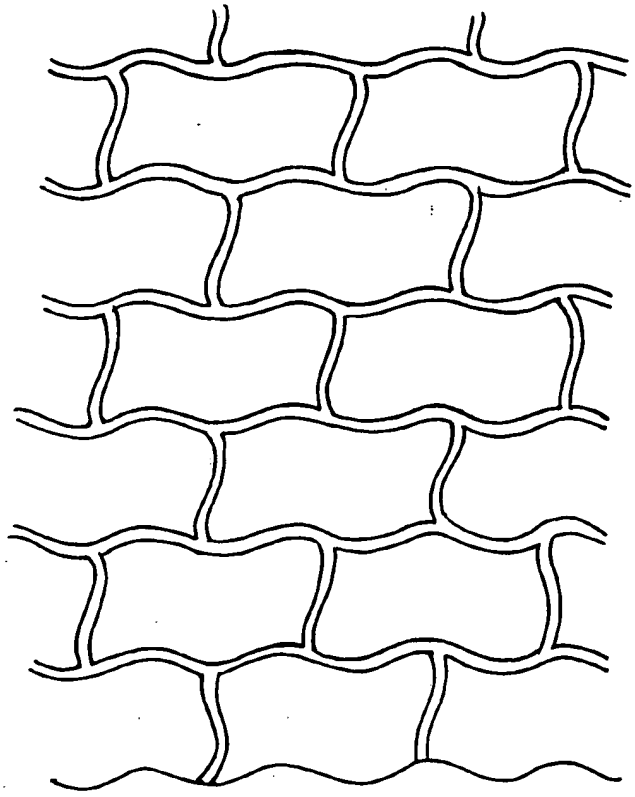

Fig.4

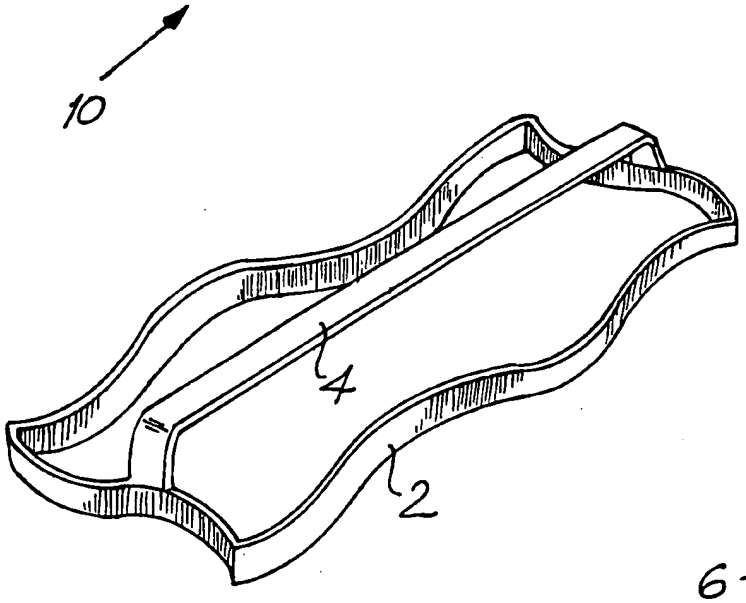

Fig.1

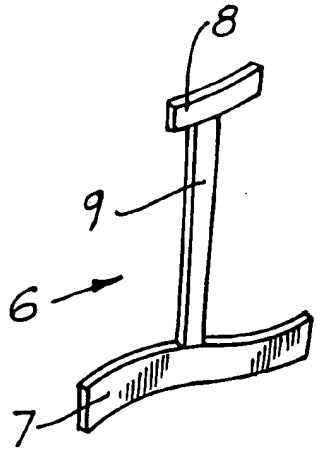

Fig.3

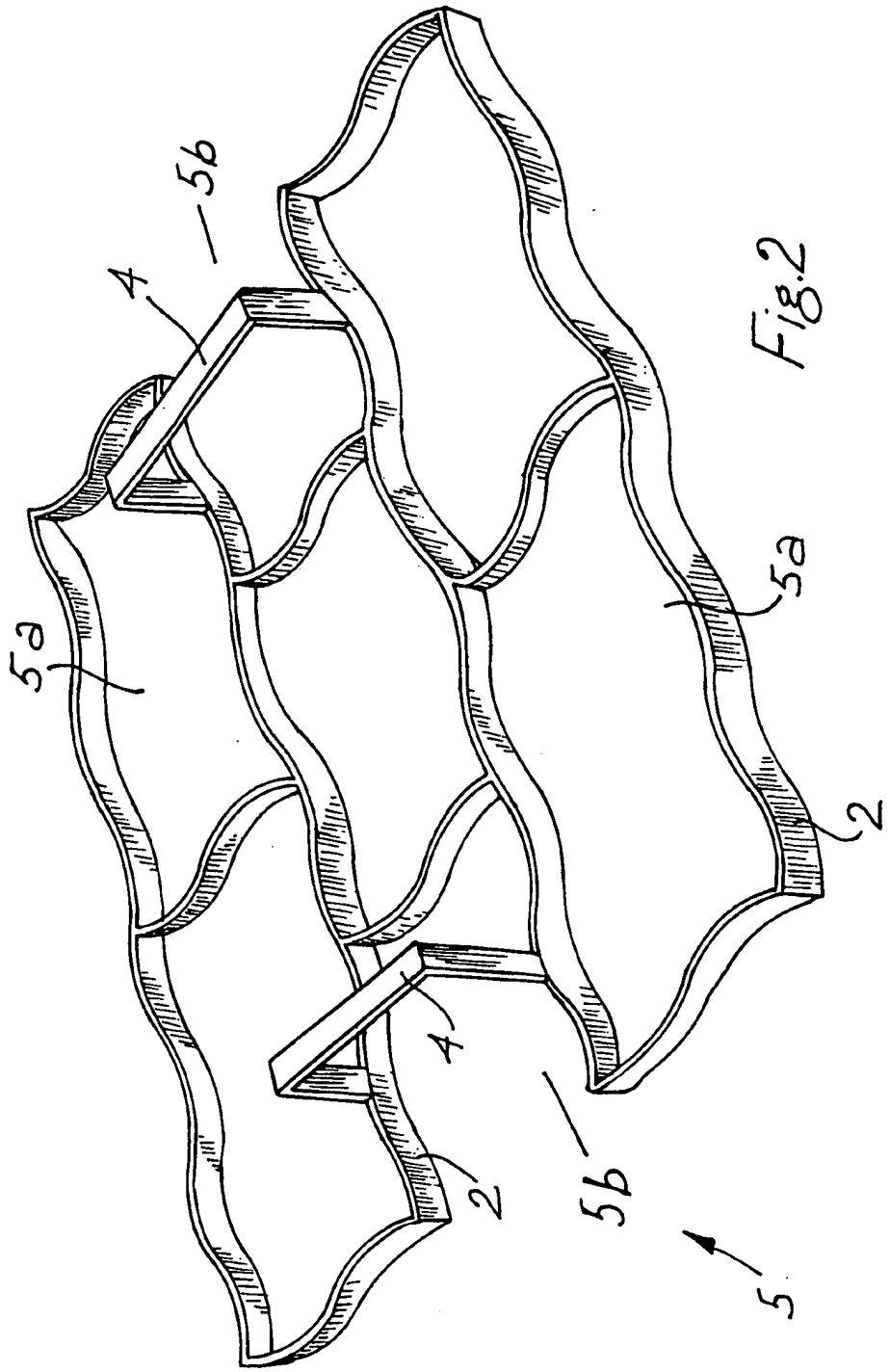

Fig.2

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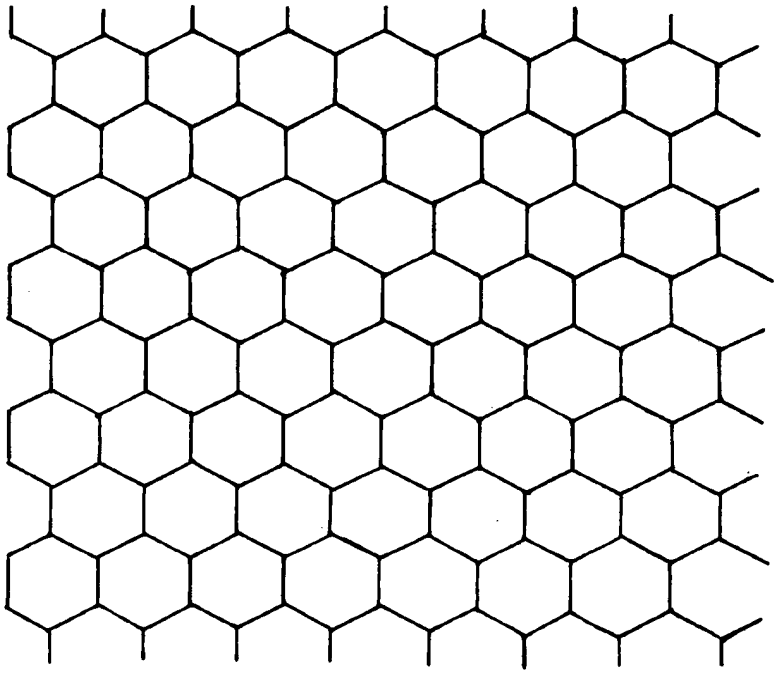

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Fig. 7

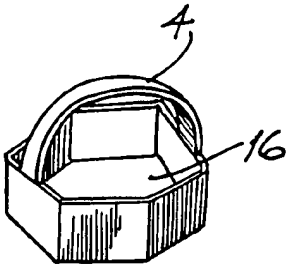

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Fig. 5

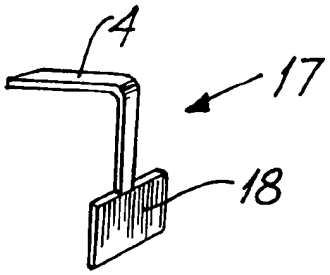

Fig. 6

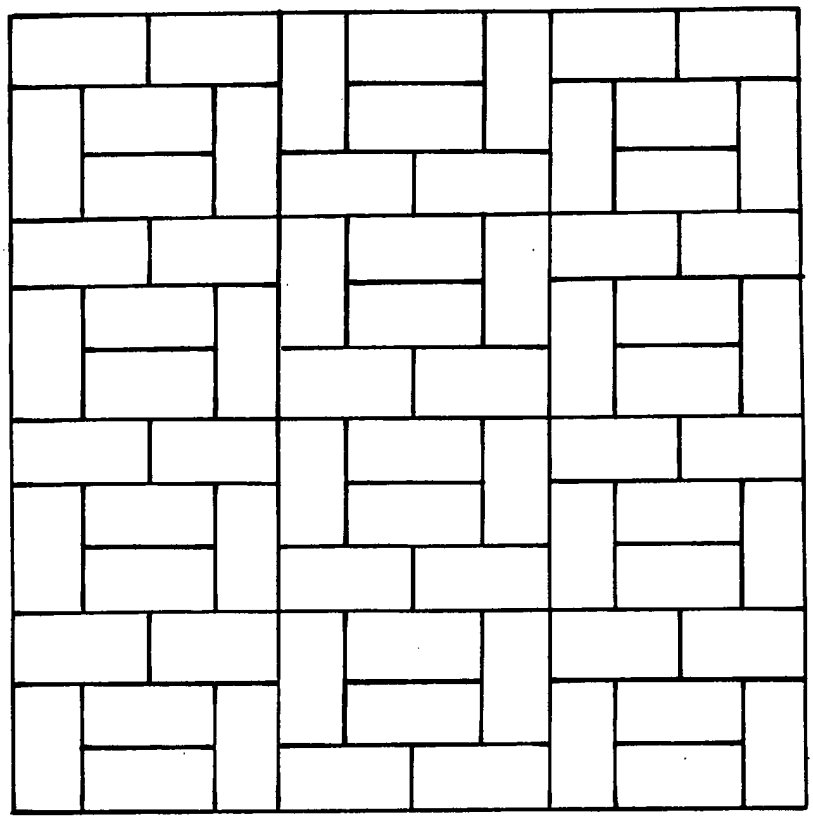

Fig.11

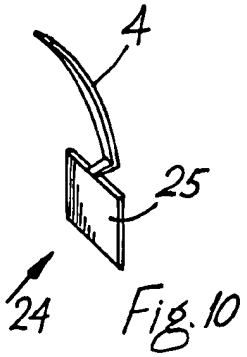

Fig.10

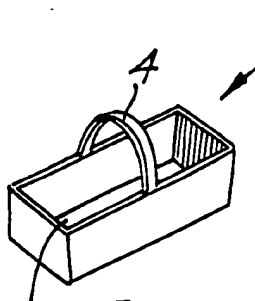

Fig.9

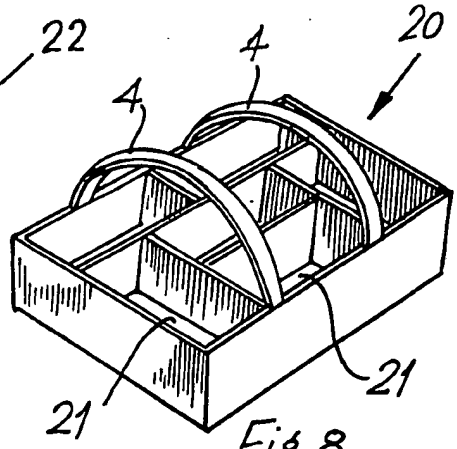

Fig.8

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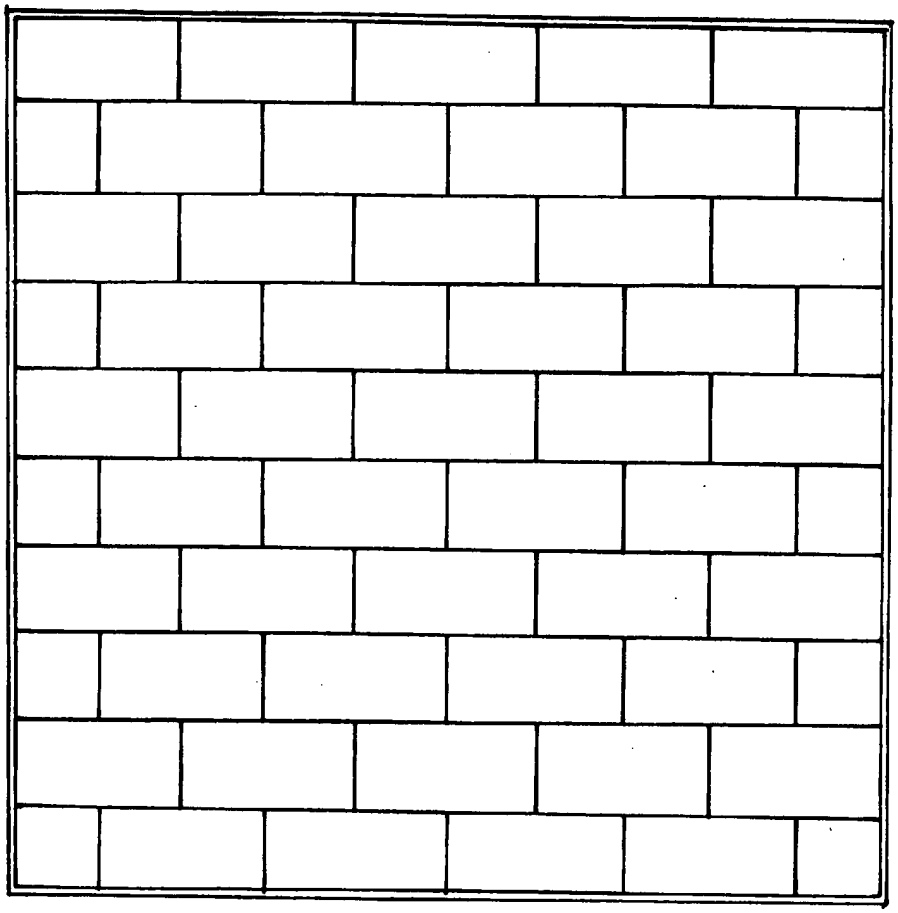


Fig. 15

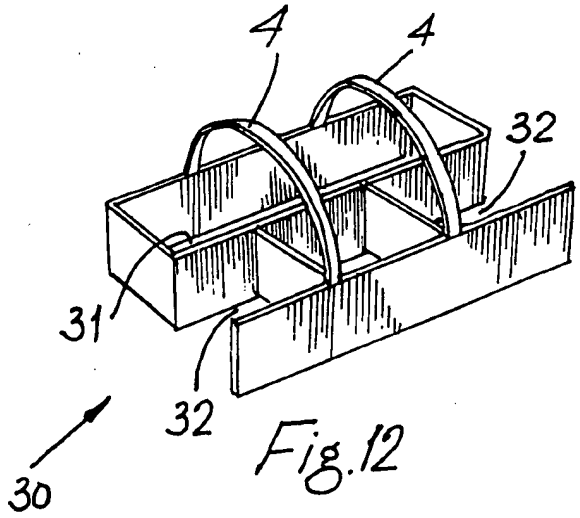


Fig. 12

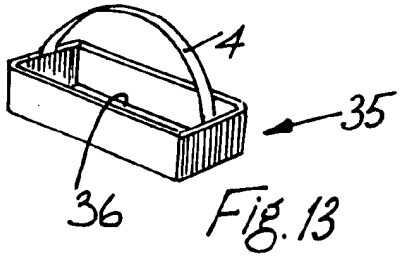
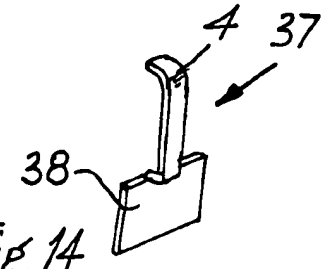


Fig. 13



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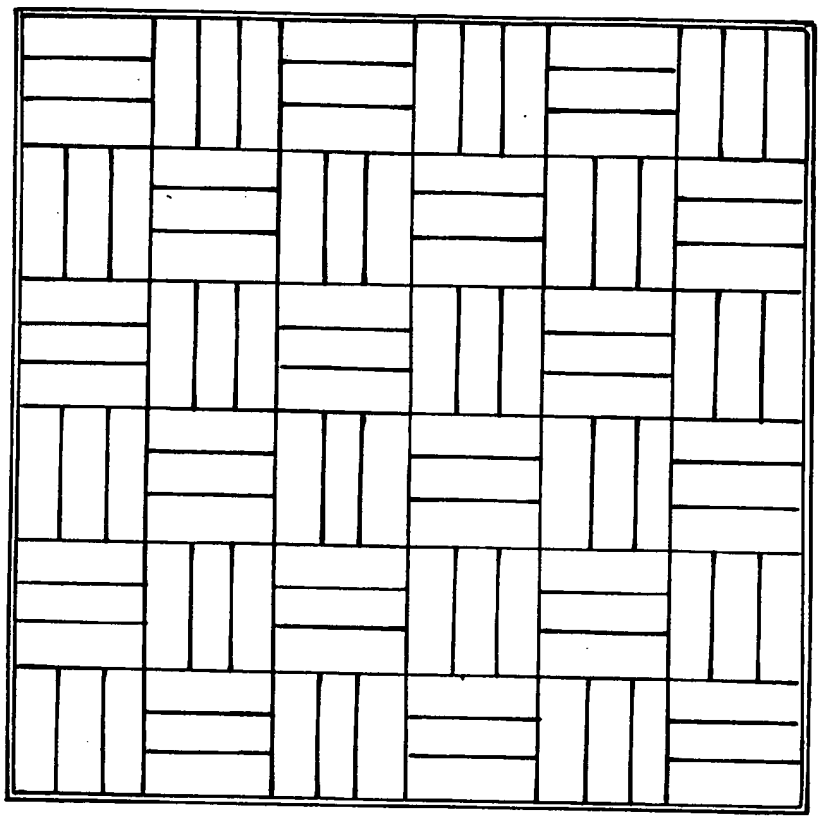

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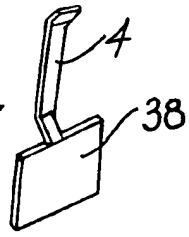
Fig. 19



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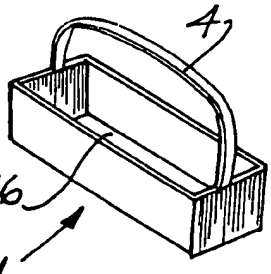


Fig. 17

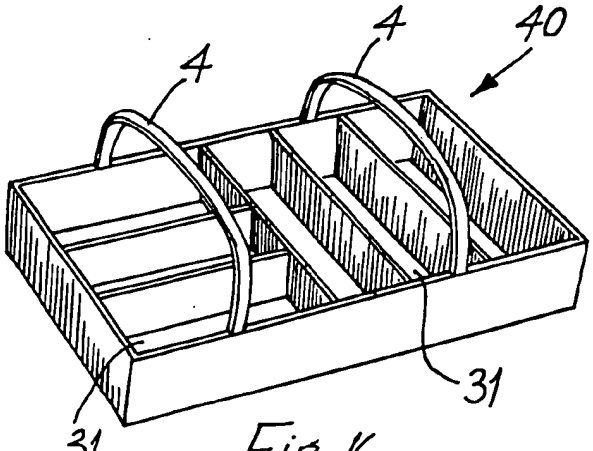


Fig. 16

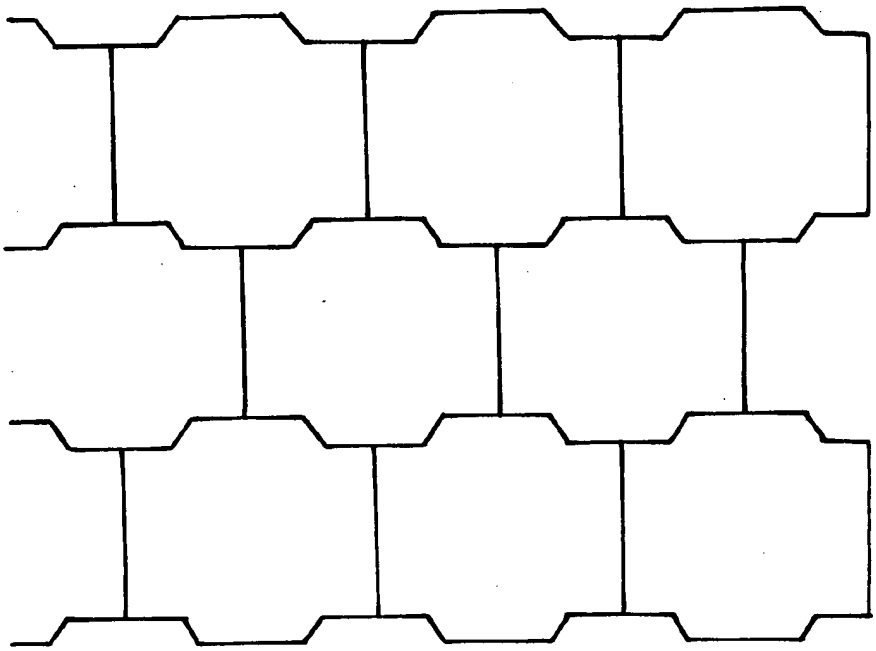


Fig. 22

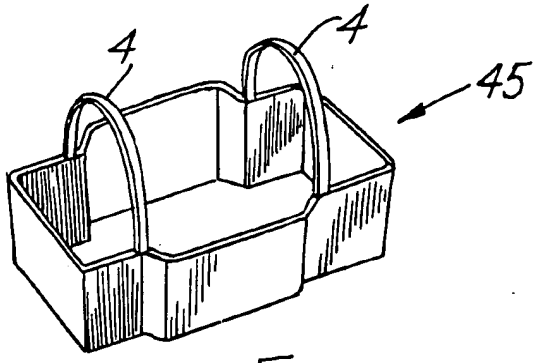
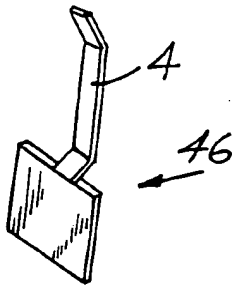


Fig. 20



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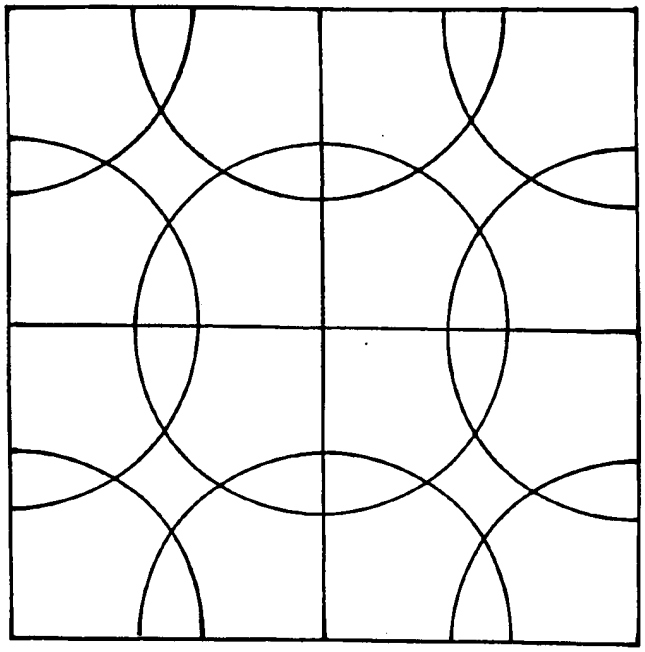

Fig.25

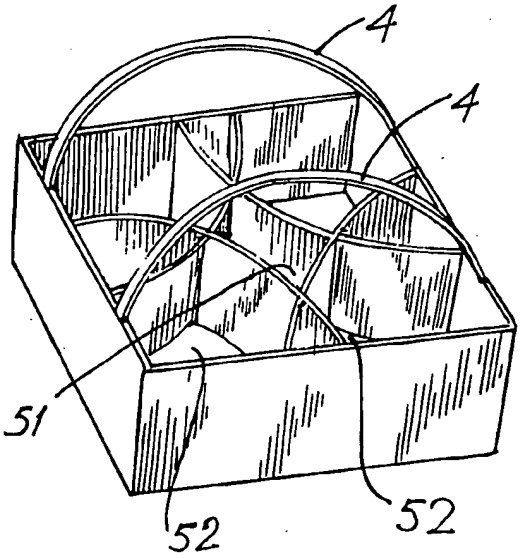

Fig.23

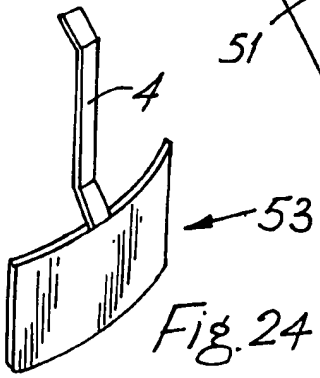

Fig.24

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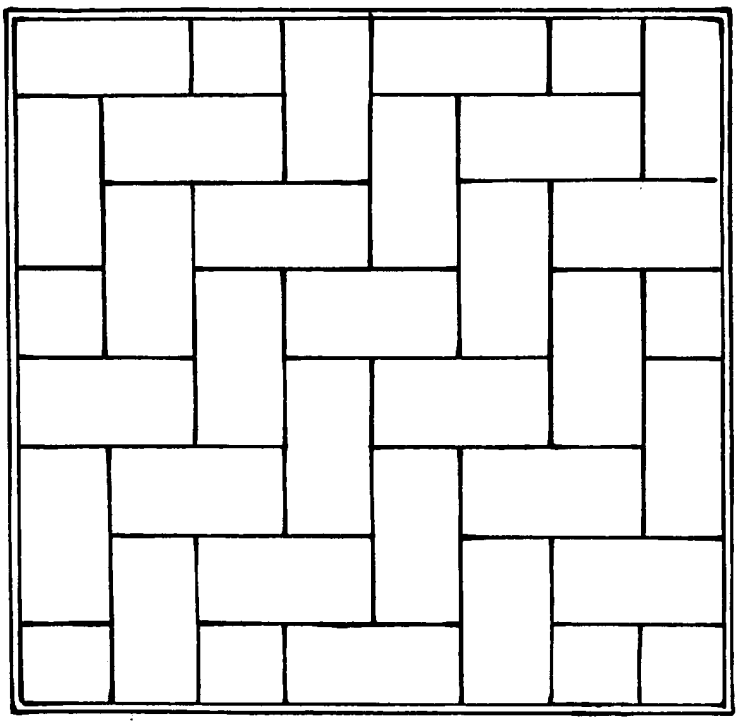

Fig.29

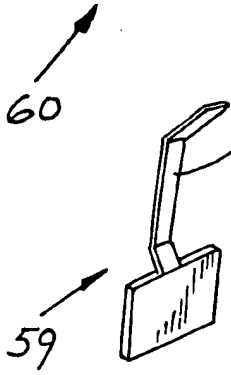

Fig.28

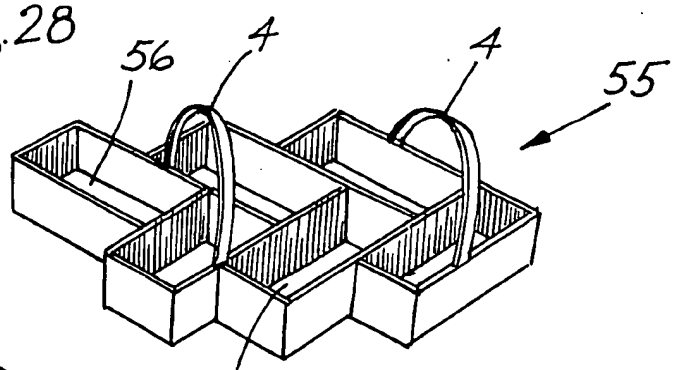

Fig.26

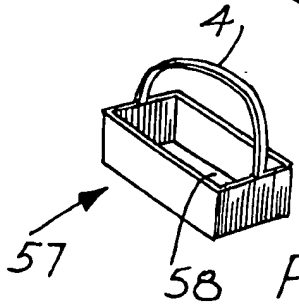

Fig.27

SPECIFICATION

Concrete patterning tool

The invention relates to a tool for making a patterned impression in a cementitious material.

The term "cementitious material" as used in the specification refers not only to conventional concrete made from portland or alumina cement but also to mortar, plaster and other materials with similar properties which harden on setting.

In making a patio, pathway, or similar area two techniques are generally used. The cheapest and quickest way of filling the area is to lay a concrete mix all over the area on a hard core base. One of the problems with this technique is that the result is a generally dull flat area of concrete without any visual interest. Another technique is to use preformed paving stones or slabs which are laid out in a desired pattern. While this generally results in a more aesthetically pleasing layout, this latter method is both time consuming and expensive.

Similar comments apply to forming facing walls and the like.

There is therefore a need for a tool for use with cementitious material which will overcome at least some of the disadvantages of these known techniques for forming patios, pathways and similar areas.

This invention is directed towards providing such a tool.

According to the invention there is provided a tool for making a patterned impression in a cementitious material, the tool comprising shaped blade means arranged in a desired pattern and means for pressing the shaped blade means into the cementitious material to form a patterned impression.

In one embodiment of the invention the means for pressing the shaped blade means into the cementitious material comprises a handle means.

In a preferred embodiment of the invention at least portion of the blade means is coated with a release agent. The release agent may for example comprise an oil based paint.

In a further embodiment of the invention the blade means is formed with a lower penetrating tip for engaging the cementitious material. Typically each blade means comprises a pair of sides which taper downwardly and terminate in a lower penetrating tip of generally inverted V-shaped cross section.

In a further embodiment of the invention the tool includes a tamping anvil means for tamping the blade means into cementitious material.

In one embodiment of the invention the blade means is arranged in at least one closed interior pattern. In this case the blade means may have a closed exterior perimeter.

Alternatively the blade means includes at least one open exterior pattern. Typically the exterior pattern is shaped to conform with portion of the interior pattern.

In another embodiment of the invention the blade means is arranged in an open perimeter forming part of the desired pattern.

In another aspect the invention provides a kit of tools for making a patterned impression in a cementitious material, the kit comprising at least two tools, each of the tools comprising shaped blade means arranged in a desired pattern, there being a first tool having a blade means arranged in at least one closed interior pattern and at least one open exterior pattern, and a second tool having an open perimeter blade means shaped as part of the closed pattern of the first tool. In one embodiment of this aspect of the invention the kit includes a third tool comprising blade means arranged in a closed perimeter having at least one closed interior pattern.

In a further aspect the invention provides a kit of tools for imprinting a patterned impression in a cementitious material, the kit comprising at least two tools, each of the tools comprising shaped blade means arranged in a desired pattern, the kit comprising a first tool having a blade means arranged in at least one closed interior pattern and a second tool having a blade means having an open perimeter shaped as part of the closed pattern of the first tool. In this case the blade means of the first tool may be arranged in a closed perimeter having at least one closed interior pattern.

In one embodiment of the invention each of the tools includes handle means for pressing the shaped blade means into cementitious material to make an impression therein.

Preferably the blade means of each of the tool means are coated with a release agent. Typically the release agent comprises an oil base paint.

In one embodiment of the invention the blade means of each of the tools is formed with a lower penetrating tip for engaging cementitious material. The sides of each blade means may taper downwardly and terminate in a penetrating tip of generally inverted V-shaped cross section.

In a preferred embodiment of the invention at least one of the tools of the kits includes a tamping anvil means for tamping the blade means into cementitious material.

The invention will be more clearly understood from the following description thereof given by way of example only with reference to the accompanying drawings in which:

Fig. 1 is a perspective view of a tool for making a patterned impression in a cementitious material,

Fig. 2 is a perspective view of another tool for making a patterned impression,

Fig. 3 is a perspective view of a further tool

for making patterned impressions,

Fig. 4 is a plan view of portion of a patio or pathway having a pattern of stamped impressions made using the tools of Figs. 1 to 3,

Figs.5 and 6 are perspective views of tools for use in making hexagonal-shaped impressions,

Fig. 7 is a plan view of a patio having a pattern of impressions made using the tools of Figs. 5 and 6,

Figs. 8,9 and 10 are perspective views of tools used in making generally rectangular shaped impressions,

Fig. 11 is a plan view of a patio having a pattern of impressions made with the tools of Figs. 8 to 10,

Figs. 12 to 14 are perspective views of further tools for making generally rectangular shaped impressions,

Fig. 15 is a plan view of a patio having a pattern of impressions made using the tools of Figs. 12 to 14,

Figs. 16 to 18 are perspective views of further tools according to the invention,

Fig. 19 is a plan view of a patio having patterned impressions made with the tools of Figs. 16 to 18,

Figs. 20 and 21 are perspective views of further tools according to the invention,

Fig. 22 is a plan view of a patio having patterned impressions made with the tools of Figs. 20 and 21,

Figs. 23 and 24 are perspective views of further tools according to the invention,

Fig. 25 is a plan vieW of a patio having patterned impressions made using the tools of Figs. 23 and 24,

Figs. 26 to 28 are perspective views of three further tools according to the invention, and

Fig. 29 is a plan view of a patio having patterned impressions made using the tools of Figs. 26 to 28.

Referring to the drawings and initially to Figs. 1 to 3 thereof there is illustrated one kit of topls according to the invention for making patterned impressions in a cementitious material. An area of cementitious material, for example, a paving area such as a patio having patterned impressions 10 made using the kit of tools of Figs. 1 to 3 is illustrated in Fig. 4.

Referring to Fig. 1 there is illustrated one tool of the kit indicated generally by the reference numeral 1. The tool 1 comprises a blade means 2 which in this case is in the form of a closed perimeter having a closed interior pattern in the shape of a single interlocking paving stone. The blade means 2 is formed from strip steel material 1/2" by 3/16". To assist insertion and withdrawal of the blade 2 into and out of the cementitious material at least the lower penetrating surfaces of the blade 2 may be coated with a release agent such as an oil based paint. Alternatively, or additionally, the blade 2 may have a penetrating tip or point for engaging the cementitious material. In this case the blade means may comprise a pair of sides which taper downwardly and terminate in a lower penetrating tip with a generally inverted V-shaped cross section.

Means for pressing the shaped blade 2 into the cementitious material to make the patterned impression is in this case provided by a handle 4 of inverted U-shape welded to the blade means 2.

Another tool of the kit as illustrated in Fig. 2 and is indicated generally by the reference numeral 5. In this case the tool comprises a blade means which is arranged in a closed interior pattern 5A and an open exterior pattern 58. In this case the interior pattern 5A is in the shape of three paving stones, each of which is of the same size and shape as the shape of blade means of the tool of Fig. 1. The exterior pattern 58 is in the form of portion of two paving stones. As the tool 5 is larger than the tool 1 two handles 4 are provided.

A third tool of the kit is illustrated in Fig. 3 and is indicated generally by the reference numeral 6. In this case the tool 6 comprises a pair of spaced-apart shaped blades namely an open perimeter paving stone blade portion 7 and a shorter open perimeter paving stone blade portion 8 which are joined by a central shank 9.

In use, the kit of tools of Figs. 1 to 3 are used to form the patio design illustrated in Fig. 4. A conventional concrete mixture is poured onto a hard core base and is tamped and levelled in the usual way. While the cementitious material is still plastic, the tools 1,5,6 are used to form the pattern illustrated in Fig. 4. In each case the tool 1,5,6 is pressed downwardly into the concrete mix to make the desired shape. For larger areas the tool 5 of Fig. 2 is used, the open perimeter portions 58 of patterned impression made by the tool engaging with open perimeter portions made by another impression of the same tool to form a closed perimeter impression. For smaller areas the single closed perimeter tool 2 of Fig. 1 isused. To clean the joints between the impressions made by the tools 1 and 5 the tool 6 is used, one or both of the blades 7,8 being pressed into the joint to clean any rough edges. The tool 6 is also used for continuing the desired pattern in locations where access is limited.

Thus, the individual tools and in particular the kit of tools according to the invention facilitate the formation of an aesthetically pleasing pattern for a patio or other area both cheaply and quickly. The use of the kit of tools according to the invention essentially represents a compromise between the length of time and costs involved in making a pattern using preformed paving stones or slabs in the aesthetically dull unpatterned concrete surface formed using premix concrete to fill an area.

Various other tools and kits of tools according to the invention and patio designs formed using these tools are illustrated in Figs. 5 to 29.

Referring to Figs. 5 to 7 the kit of tools in this case comprises a first tool 15 having a closed interior hexagonal shape 16, and a second tool 17 having a blade 18 for forming one leg of a hexagon. The tools 15,17 are used to form the hexagonal patterned impression 19 illustrated in Fig. 7.

Referring to Figs. 8 to 11 the kit of tools in this case comprises a first tool 20 having a number of closed interior rectangular shapes 21, a second tool 22 having a single closed interior rectangular shape 23 and a third tool 24 having a blade 25 for forming one leg of one of the rectangles. The tools 20,22,24 are used to form the rectangular patterned impression 26 illustrated in Fig. 11.

Referring to Figs. 12 to 14 the kit of tools in this case comprises a first tool 30 having a closed rectangular interior pattern 31 and tWo open exterior patterns 32 as illustrated. A second tool 35 comprises a single closed perimeter interior rectangular pattern 36 and a third tool 37 having a blade 38 shaped to form part of the rectangular pattern is also illustrated. The tools 30,35, and 37 of Figs. 12 to 14 respectively are used to form the patio design 39 illustrated in Fig. 15 which is generally referred to as a stretcher bond pattern.

Referring to Figs. 16 to 18 there is illustrated similar tools 41 to 43 to those described above with reference to Figs. 12 to 14, in this case for forming the basket weaved pattern 43 illustrated in Fig. 19.

Referring to Figs. 20 to 22 two tools namely a first closed interior pattern tool 45 and an open perimeter blade tool 46 for forming the "Santa Cruz" pattern 48 illustrated in Fig. 22 are provided.

Referring to Figs. 23 to 25 there is again illustrated a tool 50 having a closed interior pattern 51 and a number of open exterior patterns 52 which are used in conjunction with a small open perimeter patterned tool 53 to form the Patio design pattern 54 illustrated in Fig. 25.

Finally, referring to Figs. 27 to 29 there is illustrated a first tool 55 having a number of closed rectangular interior patterns 56, a second tool 57 having a single closed interior pattern 58 and a third open perimeter tool 59 the tools 55,57 and 59 being used to form the herring bone pattern 60 illustrated in Fig. 29.

Many other patterns other than those illustrated will be readily apparent andit will be appreciated the shape of the tools depends on the pattern which it is desired to produce.

It will also be appreciated that while the invention has been specifically described with reference to patio designs the tools and the kit of tools according to the invention may be used in forming impressions in cementitious materials in other locations such as for a flat roof, a facing wall or the like.

It will be appreciated that in some cases the tools may include a tamping anvil or striking surface to allow the tools to be tamped in a cementitious material to make the desired impression. The tamping anvil may in fact in some cases be provided by the upper edge of the blade means of the tool.

CLAIMS

1. A tool for making a patterned impression in a cementitious material, the tool comprising shaped blade means arranged in a desired pattern and means for pressing the shaped blade means into the cementitious material to form a patterned impression.

2. A tool as claimed in claim 1 wherein the means for pressing the shaped blade means into the cementitious material comprises a handle means.

3. A tool as claimed in claim 1 or 2 wherein at least portion of the blade means is coated with a release agent.

4. A tool as claimed in claim 3 wherein the release agent comprises an oil based paint.

5. A tool as claimed in any preceding claim wherein the blade means is formed with a lower penetrating tip for engaging the cementitious material.

6. A tool as claimed in claim 5 wherein each blade means comprises a pair of sides which taper downwardly and terminate in a lower penetrating tip of generally inverted V-shaped cross section.

7. A tool as claimed in any preceding claim including a tamping anvil means for tamping the blade means into cementitious material.

8. A tool as claimed in any preceding claim in which the blade means is arranged in at least one closed interior pattern.

9. A tool as claimed in claim 8 wherein the blade means has a closed exterior perimeter.

10. A tool as claimed in claim 8 wherein the blade means includes at least one open exterior pattern.

11. A tool as claimed in claim 10 wherein the exterior pattern is shaped to conform with portion of the interior pattern.

12. A tool as claimed in any of claims 1 to 7 wherein the blade means isarranged in an open perimeter forming part of the desired pattern.

13. A kit of tools for making a patterned impression in a cementitious material, the kit comprising at least two tools, each of the tools comprising shaped blade means arranged in a desired pattern, there being a first tool having a blade means arranged in at least one closed interior pattern and at least one open exterior pattern, and a second tool having an open perimeter blade means shaped as part of the closed pattern of the first tool.

14. A kit of tools as claimed in claim 13 including a third tool comprising blade means arranged in a closed perimeter having at least one closed interior pattern.

15. A kit of tools for imprinting a patterned impression in a cementitious material, the kit comprising at least two tools, each of the tools comprising shaped blade means arranged in a desired pattern, the kit comprising a first tool having a blade means arranged in at least one closed interior pattern and a second tool having a blade means having an open perimeter shaped as part of the closed pattern of the first tool.

16. A kit of tools as claimed in claim 15 wherein the blade means of the first tool is arranged in a closed perimeter having at least one closed interior pattern.

17. A kit of tools as claimed in any of claims 13 to 16 wherein each of the tools includes handle means for pressing the shaped blade means into cementitious material to make an impression therein.

18. A kit of tools as claimed in any of claims 13 to 17 wherein at least portion of the blade means of each of the tool means are coated with a release agent.

19. A kit of tools as claimed in claim 18 wherein the release agent comprises an oil based paint.

20. A kit of tools as claimed in any of claims 13 to 19 wherein each blade means is formed with a lower penetrating tip for engaging cementitious material.

21. A kit of tools as claimed in claim 20 wherein the sides of each blade means taper downwardly and terminate in a penetrating tip of generally inverted V-shaped cross section.

22. A kit of tools as claimed in any of claims 13 to 21 wherein at least one of the tools includes tamping anvil means for tamping the blade means into cementitious material.

23. A tool for making a patterned impression in a cementitious material substantially as hereinbefore described with reference to the drawings.

24. A kit of tools for making a patterened impression in a cementitious material substantially as hereinbefore described with reference to the drawings.

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